**Abstract**

Objective: To develope a conservation strategies for orchid species. Methods: Seeds of *Acampae praemorsa* (Roxb.) Blatt. Mc Cann (A. praemorsa) were obtained from mature pods collected from Velliangiri hills and germinated on Murashige and Skoog (MS) medium supplemented with various concentration of Benzylaminopurine (BAP). Results: Maximum seed germination (85%) was observed on MS media supplemented with 2 mg/L BAP. Seed germination percentage increased with increasing concentrations of BAP (0.5 mg/L to 2 mg/L), but 3 mg/L of BAP inhibited seed germination. Variations observed were significantly (P<0.01) different for concentrations of growth regulators, days and their interactions. The embryos in the seeds swelled prior to germination. Fifty days after inoculation, well developed greenish porotocorm like bodies (PLBs) were formed and by 80th day, 85% (maximum) of the PLBs were observed in MS supplemented with 2 mg/L BAP. Eighty days after seed sowing, the germination rate decreased and the PLBs were transformed into first and second leaf stages in media supplemented with Naphthaleneacetic acid (NAA). Maximum seedling numbers (84%) were observed in MS medium supplemented with 1 mg/L NAA at 110th day. After 110 days, the seedlings were transferred to 0.6 g/L MS medium containing activated charcoal and similar concentration of growth regulators for root induction. After rooting, the seedlings were transferred to ex vitro conditions. Conclusions: In present study all the mycorrhizal seedlings survived, because orchid mycorrhizal fungi enhance growth of orchid plantlets and present study gives an effective protocol for seed germination and plantlet regeneration from immature seeds which can be used for establishing *A. praemorsa* populations in Velliangiri Hills and elsewhere.